ADDENDUM NO. 2

CITY OF KINGMAN

HILLTOP WASTEWATER TREATMENT FACILITY UPGRADE AND EXPANSION
City Project No. ENG07-006
City Contract No. ENG08-083

January 21, 2009

Expires 3/31/11

GENERAL

The following products shall be added to the Contract Documents as "equal" to named products. Note where a product is named as "equal" this does not imply that it is necessarily acceptable for a particular application. It must meet all specification requirements, without exception.

Section 07410, Metal Roof Panels. Paragraph 2.01, MANUFACTURERS. Add the following:

"9. Metal Sales Manufacturing Corp. Vertical Seam Panel"

Section 15062, Ductile Iron Pipe. Paragraph 2.04, FITTINGS (AWWA C111 and AWWA C153). and paragraph 2.05, B, 2, restrained joints, push-on, buried pipe 4" through 12". Star Pipe Products.

SPECIFICATIONS

Section 03100, Formwork, Paragraph 2.02, FORM TIES. Clarification: Add the following at the end of Paragraph 2.02:

"Taper ties may be used provided that on liquid-containing structures recessed taper tie plugs are used on both surfaces. Recess shall be grouted flush with surfaces of walls and rubbed to blend into surrounding concrete. Contractor is responsible for water-tightness of plugs; absolutely no visible leakage will be permitted at taper tie holes."

Section 03300, Cast-in-Place Concrete, Paragraph 3.04 A. Revise paragraph 3.04 A as follows:

"Concrete curing shall be completed by water curing or by using a **pigmented** membrane curing compound. . ."

The remainder of this paragraph shall remain as written.

Section 03400, Precast and Prestressed Concrete. Paragraph 2.01, PERFORMANCE AND DESIGN REQUIREMENTS. Add the following at the end:

"25. Precast, prestressed double tees for the Dewatering Building and the Screenings Building shall have a flange thickness of at least 2½ inches.

26. Precast, prestressed double tees shall be designed for a minimum superimposed dead load of 15 psf exclusive of superimposed crane loads where applicable."

Section 03400, Precast and Prestressed Concrete. Paragraph 2.02, F. EMBEDMENTS. Delete and replace with the following:

"All embedded plates, inserts, and anchorage devices unless totally embedded shall be stainless steel. Steel bars, plates and shapes shall be fabricated from ASTM A276 stainless steel. Type 304 shall be used for the Dewatering Building; Type 316 shall be used for the Screenings Building. Headed studs shall be totally embedded and shall meet ASTM A108 with a minimum yield strength of 50,000 psi and minimum tensile strength of 60,000 psi. Deformed bar anchors shall be totally embedded and shall meet ASTM A496 with a minimum yield strength of 70,000 psi and a minimum tensile strength of 80,000 psi. Welds between stainless and non-stainless steels shall utilize Type 309 electrodes."

Section 05520, Handrailing. Paragraph 1.02 B. REFERENCES. Table, first column, third entry (opposite Stainless Steel). Delete "ASTM" and replace with "ASTM A276."

Section 05520, Handrailing. Paragraph 2.01, MATERIALS. Table, second column opposite Stainless Steel, enter "ASTM A276, Type 304 or 306, where indicated."

Section 09885, Corrosion-Resistant Coating Systems. Delete and replace with revised Section 09885, attached to this addendum.

Section 11069, Adjustable Frequency Drives, Paragraph 2.01, ENCLOSURES, sub-paragraph B, AFD Manufacturers. Delete and substitute the following:

B. AFD MANUFACTURERS:

"AFD installed in the custom enclosures as specified and as indicated:

1. ABB
2. Toshiba
3. Cutler-Hammer
4. General Electric
5. Siemens
6. Square D
7. Allen Bradley
8. Benshaw Rsi-SGP"

Section 11475, Rotary Positive Displacement Blowers. Clarifications:

- At bidder's option, tri-lobe blowers may be furnished.

- It is not intended that a single blower model be provided for all three applications.

- Variable frequency drives (VFD) are not required or intended.

Section 13234, Fiberglass Reinforced Plastic (FRP) Ductwork. Paragraph 2.07, DAMPERS, paragraph A, and subparagraphs 1 and 2. Delete, and substitute the following:

A. GENERAL:

"FRP dampers shall be utilized throughout the odor control system. Dampers shall have FRP or Type 316 stainless steel blades, Type 316 stainless steel shafts and hardware, and permanently lubricated bearings of material impervious to attack by acids and caustics. Pultruded FRP shafts are acceptable. Damper frames shall be molded fiberglass channel, fabricated to match connecting ductwork. Flanges shall be pre-drilled and resin coated and shall match duct flanges and bolt patterns as specified in this section. No field-fabricated or spooled-in duct dampers will be allowed.

1. Double lip or O-ring type gas-tight seals shall be provided to prevent leakage at all shaft ductwork penetrations. Bearings shall be flange mounted, located outside the air stream. Bearings shall be molded PTFE or re-lubricable rolling element.

2. Damper linkage shall be a hand quadrant, lever operator, capable of transmitting twice the maximum torque required by the damper at 20 inches differential pressure. Linkage lever arms shall be a minimum of 6 inches, and the lever arms shall be firmly attached to the damper shaft. All exterior linkage connections on rectangular dampers shall be supplied with oil impregnated bronze bearings."

Remainder of Paragraph A (subparagraphs 3 and 4) shall remain unchanged.

Section 13234, Paragraph 2.07, DAMPERS, paragraph B, Rectangular Dampers. Last sentence, delete the words "tack-welded" and substitute the words "firmly attached."

Section 13234, Paragraph 2.07, DAMPERS, paragraph C, Standard Round Dampers. Delete and substitute the following:

"Round dampers shall be flanged butterfly type, suitable for balancing and shut-off. Dampers shall be constructed between two flanges unless specifically called out otherwise. Minimum damper blade thickness shall be no less than ¼ inch for 6 inch diameter dampers up to 36 inch, and shall be ½ inch for 36 inch diameter and larger. Shaft seal shall be Viton O-ring. Leakage through the closed damper at 70 degrees F and 10 inches water column differential pressure shall not exceed 30 cfm per square foot of conduit cross-sectional area. Standard round dampers shall be Spundstrand, Swartwout Model 912 or 914, or approved equal. Unless shown

otherwise, all round odor control system dampers shall be standard round dampers with full circumference blade seal."

Section 13234, Paragraph 2.07, DAMPERS, Paragraph D, Zero Leak Round Dampers. Delete and substitute the following:

"Zero leak dampers shall be suitable for air tight sealing, and leak free at 28 inches w.c. pressure for one hour. Dampers shall be constructed between two flanges. Minimum damper blade thickness shall be as specified for Standard Round Dampers in this section. Shaft seal shall be Viton O-ring. Zero leak dampers shall be provided similar to the detail drawing in this specification section and installed at the locations shown on the contract drawings. Zero leak dampers shall be Spundstrand ZL Series, Ershigs Type B, or approved equal. Zero leak construction is required only where so noted on the drawings."

Section 15050, Piping Systems, Paragraph 3.06, PIPING SPECIFICATION SHEETS (PIPESPEC), System 12.

Piping Symbol/Service, add the following:

"SS—Sanitary Sewer"

Exposed Pipe and Valve, Greater than 24" Pipe, Ductile iron. Delete the words "... or FRP mortar pipe per Section 15059".

Buried and Encased Pipe and Valves, 14" and larger Pipe. Modify as follows:

"Ductile iron; same as 12 inch for pipe and ftgs (pressure pipe only) or FRP mortar pipe per Section 15059 (for non-pressure pipe).
Conn; restrained bell and spigot with O-ring rubber gasket joint. Flanged adapters for valves. For FRP mortar pipe, use sleeve couplings provided by pipe manufacturer.
Ftgs; ductile iron, per spec Section 15062; coating, lining and ends to match pipe. Fittings for FRP mortar pipe shall be in accordance with Section 15059, paragraph 2.03, D."

Under Remarks, add the following:

"2. For RS/SS service pressure testing is not required. Leak test per Arizona Administrative Code Title 18, Chapter 9, Section E301, D, 2, j; use method appropriate to material being tested."

Section 16030, Electrical Acceptance Testing. Paragraph 1.04, TESTING FIRM QUALIFICATIONS, sub-paragraph 5, pre-qualified Testing Firms. Add the following firm:

"Electric Power Systems, Mesa, Arizona"

DRAWINGS

Detail S-003, Detail A. Delete reference to Detail "X" – substitute "Detail E/S-003."

Drawing S-102, Junction Structure, Details 1 and 2, suspended deck rebar. Add the following note, each Detail: "Use #5 @12" each way, top and bottom."

Drawing M-502, RAS/WAS Pump Station Section. Delete Keynote 2 and substitute the following:

"2. 16 inch knife gate valve."

Modify callout for the pipe coming into the station from the north to read "24 inch ML"

Add callout for the reducer, underground, right-hand side of page: "24" x 16" reducer"

Modify callout shown on the vertical pipe through the RAS/WAS pump station vault floor to read "16 inch ML".

Drawing M-624. Delete Keynote 3 and substitute the following:

"3. 8' diameter I.D. wet well. See Drawing S-042 for wet well and valve vault details."

This Addendum, including all attachments, shall become a part of the Contract Documents. Bidders shall acknowledge receipt of Addendum 2 on Page 1 of Section 00410 (Bid Form).

SECTION 09885

CORROSION-RESISTANT COATING SYSTEMS

PART 1--GENERAL

1.01 DESCRIPTION

A. SCOPE:

This section specifies the coating system used for the lining of the manholes, channels, wet wells, biofilter, and similar structures that are subject to corrosion through the action of hydrogen sulfide per paragraph 3.10.

The coating shall yield a hard, durable chemical resistant coating and shall be specifically designed to be applied on a dry surface. The finished coating shall provide a watertight seal and shall adhere to PVC and other materials that occur within the manholes, channels and structures to be coated.

B. DEFINITIONS:

Specific coating terminology used in this section is in accordance with definitions contained in ASTM D16, ASTM D3960, and the following definitions:

1. DRY FILM THICKNESS (DFT): The thickness of one fully cured continuous application of coating.

2. FIELD COAT: The application or the completion of application of the coating system after installation of the surface at the site of the work.

3. SHOP COAT: One or more coats applied in a shop or plant prior to shipment to the site of erection or fabrication, where the field or finishing coat is applied.

4. TIE COAT: An intermediate coat used to bond different types of paint coats. Coatings used to improve the adhesion of a succeeding coat.

5. PHOTOCHEMICALLY REACTIVE ORGANIC MATERIAL: Any organic material that will react with oxygen, excited oxygen, ozone or other free radicals generated by the action of sunlight on components in the atmosphere giving rise to secondary contaminants and reaction intermediates in the atmosphere which can have detrimental effects.

6. VOLATILE ORGANIC COMPOUND (VOC) CONTENT: The portion of the coating that is a compound of carbon, is photochemically reactive, and evaporates during drying or curing, expressed in grams per liter or pounds per gallon.

7. TOUCH-UP PAINTING: The application of paint on areas of painted surfaces to repair marks, scratches, and areas where the coating has deteriorated to restore the coating film to an unbroken condition.

1.02 QUALITY ASSURANCE

A. REFERENCES:

This section contains references to the following documents. They are a part of this section as specified and modified. In case of conflict between the requirements of this section and those of the listed documents, the requirements of this section shall prevail.

Reference	Title
ASTM D16-93	Standard Terminology Relating to Paint, Varnish, Lacquer, and Related Products
ASTM D3359 A-92	Methods for Measuring Adhesion by Tape Test
ASTM D3960-92	Practice for Determining Volatile Organic Compound (VOC) Content of Paints and Related Coatings
F 595 B-89	Federal Standard Colors

B. STANDARDIZATION:

Materials and supplies provided shall be the standard products of manufacturers. Materials in each coating system shall be the products of a single manufacturer.

C. APPLICATION QUALIFICATIONS:

The contractor or subcontractor performing the work covered by this specification (also referred to herein as "the coating applicator") shall have a minimum of three (3) year's experience performing similar work and shall have completed a minimum of five (5) such projects within the last five years, using the products of one or more of the approved manufacturers listed in this specification. The coating applicator shall report any failures that occurred after final acceptance of any of the listed projects, whether said failures occurred during the warranty period or later. The coating applicator shall also report any remedial action taken to address said failures and the final resolution. The coating applicator may attach additional sheets as necessary. An unacceptable performance history (having less than three years' experience, having fewer than five completed projects within the last five years, and/or having failures that have not been corrected by remedial action) shall serve as the basis of rejection of the coating applicator.

The coating applicator shall also submit a certification letter from the manufacturer of the product (i.e., one of the approved products listed in this specification) that the applicator intends

to install. The certification letter shall state that the coating applicator has been trained and is certified and approved by the manufacturer to apply the manufacturer's coating in concrete structures.

D. All approved coating systems selected for this project must have a proven minimum five (5) year track record of successful performance under similar exposure conditions (same level of severity) and on similar structures, i.e. manholes, channels, wet wells, and biofilters, etc.

This proven track record must be verifiable through the submittal of five specific references that demonstrate the successful performance of the coating system on the very same types of structures to be coated for this project in which similar severe biogenic sulfide corrosion could or did occur. These references must verify that the coating system has been re-inspected over the past two years with favorable performance findings. The references must include agency or operator name and location, contact names, telephone numbers, and email addresses. At least three of the submitted references shall be for structures other than manholes (e.g. channels and rectangular structures).

These references must also list the structures in which the coatings were applied and when the coatings were applied in those structures. These references shall be submitted in accordance with Paragraph 1.03 B.7 of this Section.

1.03 SUBMITTALS

A. Provide in accordance with Section 01300.

B. Submit the following prior to commencing with any phase of the work covered by this Section:

1. Manufacturer's current printed recommendations and product data sheets for all coating system products including performance criteria, surface preparation and applications, volatile organic compound (V.O.C.) data, and safety requirements.

2. Material Safety Data Sheets (MSDS) for any materials brought on-site including all coating system materials, solvents, and abrasive blast media.

4. List of cleaning and thinner solutions allowed by the coating manufacturer.

5. Storage requirements including temperature, humidity, and ventilation for Coating System Materials as recommended by the coating manufacturer.

6. Coating manufacturer's details and written instructions for coating system treatment and details at all coating system terminations in the structures to be coated including pipe penetrations, metal embedments, gate frames,

and other terminations to be determined from the drawings. This information shall also include detail treatment for coating system at all joints in concrete.

7. Five project references demonstrating the successful performance of the selected coating system over a minimum period of five (5) years meeting the criteria and providing the referenced information delineated in paragraph 1.02 D. of this Section of the specifications.

D. Submit all information as required in Paragraph 2.02.

1.04 DELIVERY AND STORAGE

Materials shall be delivered to the job site in their original, unopened containers. Each container shall bear the manufacturer's name, coating type, batch number, date of manufacture, storage life, and special directions. Comply with Section 01605.

Materials shall be stored in enclosed structures and shall be protected from weather and excessive heat or cold. Flammable materials shall be stored in accordance with state and local codes. Materials exceeding storage life recommended by the manufacturer shall be removed from the site.

1.05 INSTALLATION QUALITY CONTROL

Contractor shall arrange for manufacturer's authorized factory representative to inspect prepared surfaces (with representatives of the Contractor and the Construction Manager) prior to installation of any products included under this section. Contractor shall also procure the services of a National Association of Corrosion Engineers (NACE) International Certificated Coatings Inspector with documentable experience in application of coatings to concrete who shall inspect materials prior to application to the structure, inspect and record surface (substrate) condition, measure and record surface and ambient air temperatures and humidity at minimum 4-hour intervals, and who shall be responsible for all installation testing, including adhesion, continuity and film thickness. Certified Coatings Inspector qualifications shall be provided to Construction Manager prior to scheduling any coating work covered by this section. A written report shall be prepared covering each area where coatings covered by this section are applied; copies shall be simultaneously provided to the Contractor and Construction Manager.

PART 2--PRODUCTS

2.01 MATERIALS

A. COATING:

The coating for existing manhole lining and for lining of new manholes and structures where scheduled in this Section shall be Sewer Shield Liner 100 as manufactured by

Environmental Coatings, Mesa, Arizona (for all structures covered by this Section), Sauereisen No. 210 as manufactured by Sauereisen, Inc., Pittsburgh, Pennsylvania (for all structures covered by this Section), Plasite 5371 (for all structures covered by this Section), Tnemec Series 436 (for all structures covered by this Section) or COR+GARD 100% solids high-build epoxy as manufactured by Action Products Marketing (APM), Johnston, Iowa (for Biofilter and Biofilter Sump structures). The coating shall be white or ivory in color.

Sprayable or trowelable formulations of the products listed above are acceptable. If "sprayable", the product shall be applied by an airless sprayer or spincaster. In addition, if applied by airless sprayer or spincaster, the final underlayment layer and the final surface coating layer shall both be trowel finished before setting. The Contractor shall not re-use or apply rebounded, spilled or oversprayed material. For overhead work, application shall be spray-applied over appropriate filler material.

B. PRIMER:

Primer shall be as recommended by the manufacturer for each application.

C. DEFECT FILLER:

Defect filler shall be as recommended by the manufacturer for each application.

2.02 PRODUCT DATA

Before materials are delivered to the job site, the Contractor shall provide the following information in accordance with Section 01300:

1. For the filler, primer and finish coating, the Contractor shall furnish a Material Safety Data Sheet (MSDS).

2. For the filler and finish coating, the Contractor shall provide the manufacturer's application instructions, which shall include the following:

   a. Surface preparation recommendations.

   b. Primer type, where required.

   c. Maximum dry and wet mil thickness per coat.

   d. Minimum and maximum curing time between coats, including atmospheric conditions for each.

   e. Curing time before submergence in liquid.

   f. Thinner to be used with coating material.

   g. Ventilation requirements.

h. Minimum atmospheric conditions during which the coating shall be applied.

i. Allowable application methods.

j. Maximum allowable moisture content.

k. Maximum storage life.

3. List of materials proposed to be used under this section and manufacturer's data for each material.

PART 3--EXECUTION

3.01 COATINGS

A. GENERAL:

Coating products shall not be used until the Construction Manager has inspected the materials and the coating manufacturer's technical representative has instructed the Contractor and Construction Manager in the surface preparation, mixing and application of the coating. The coating manufacturer's technical representative must be a factory representative, not a local representative or an affiliate of the contractor.

B. COATING SYSTEMS:

Field coats shall consist of one or more finish coats to build up the coating to the specified dry film thickness. Unless otherwise specified, finish coats shall not be applied until other work in the area is complete and until prepared substrate and all previous coats have been inspected.

C. COATING REQUIREMENTS:

All items of equipment, or parts and surfaces of equipment, which are immersed when in service, with the exception of pumps and valves shall have all surface preparation and coating work, performed in the field. For structures such as channels and wet wells, walls, underside of top slabs, pipe sleeves or wall sleeves, and other appurtenances inside the structures with the exception of stainless steel items shall receive coating.

3.02 PREPARATION

A. GENERAL:

Surfaces to be coated shall be clean and dry. Before applying coating or surface treatments, oil, grease, dirt, rust, loose mill scale, old weathered coatings, and other foreign substances shall be removed except as specified. New concrete surfaces shall have cured for a

minimum of 30 days or longer if coating manufacturer recommends. Oil and grease shall be removed before mechanical cleaning is started. Where mechanical cleaning is accomplished by blast cleaning, the abrasive used shall be washed, graded and free of contaminants, which might interfere with the adhesion of the coatings. The air used for blast cleaning shall be sufficiently free of oil and moisture to not cause detrimental contamination of the surfaces to be coated. The Contractor shall examine all surfaces to be coated and shall correct all surface defects as specified in Section 3.06 before application of any coating.

The Contractor's certified NACE Inspector shall perform an adhesion test after proper cure in accordance with ASTM D3359 to demonstrate that (1) the specified field coatings adhere to the substrate. Test results showing an adhesion rating of 5A on immersed surfaces and 4A or better on all other surfaces shall be considered acceptable. Where unacceptable test results are obtained, the Contractor shall be responsible for removing and reapplying the specified coatings at no expense to the Owner.

B. DETAILED SURFACE PREPARATION:

Surface preparations for each type of surface shall be in accordance with the specific requirements of the coating specification sheet (COATSPEC) of this specification section.

3.03 APPLICATION

A. WORKMANSHIP:

Coated surfaces shall be free from runs, drops, ridges, waves, laps, and brush marks. Coats shall be applied so as to produce an even film of uniform thickness completely coating corners and crevices. Painting shall be done in accordance with the requirements of SSPC Paint Application Specification No. 1.

The Contractor's equipment shall be designed for application of the materials specified. The coating shall be applied using a trowel suitable for obtaining the proper thickness and surface characteristics as recommended by the coating manufacturer.

Each coat shall be applied evenly and sharply cut to line. Care shall be exercised to avoid over-coating or spattering on surfaces not to be coated.

B. ATMOSPHERIC CONDITIONS:

Coatings shall be applied only to surfaces that are dry, and only under conditions of evaporation rather than condensation. Coatings shall not be applied during rainy, misty weather, or to surfaces upon which there is frost or moisture condensation. During damp weather, when the temperature of the surface to be coated is within 10 degrees F of the dew point, the surfaces shall be heated to prevent moisture condensation thereon. During coating, and for a period of at least 8 hours after the coating has been applied, the temperature of the surfaces to be coated, the coated surfaces, and the atmosphere in contact shall be maintained at or above 40 degrees F and 10 degrees F above the dew point. Paint, when applied, shall be approximately the same

temperature as that of the surface on which it is applied. Fans or heaters shall be used inside enclosed areas where conditions causing condensation are severe.

C. PROTECTION OF COATED SURFACES:

Items which have been coated shall not be handled, worked on, or otherwise disturbed, until the coating is completely dry and hard.

D. FILM THICKNESS AND CONTINUITY:

Coating system thickness is the total thickness of finish coats.

The surface area covered for various types of surfaces shall not exceed those recommended by the manufacturer. Coatings shall be applied to the thickness specified, and in accordance with these specifications.

In testing for continuity of coating about welds, projections (such as bolts and nuts), and crevices, the Contractor's Certified NACE inspector shall determine the minimum conductivity for smooth areas of like coating where the dry mil thickness has been accepted. This conductivity shall then be taken as the minimum required for these rough or irregular areas. Pinholes and holidays shall be repainted to the required coverage.

E. SAFETY AND VENTILATION REQUIREMENTS:

Requirements for safety and ventilation shall be in accordance with SSPC Paint Application Guide No. 3.

3.04 CLEANUP

Upon completion of coating, the Contractor shall remove surplus materials, protective coverings, and accumulated rubbish, and thoroughly clean all surfaces and repair any overspray or other paint-related damage.

3.05 COATING SYSTEM SPECIFICATION SHEETS (COATSPEC – Alternative 1)

Surfaces shall be coated in accordance with the COATSPEC to the system thickness specified.

Coating System Identification:	Sewer Shield Liner 100
Surface:	Concrete/Masonry
Surface Preparation:	Abrasive Blasting
Concrete:	Except as otherwise specified, loose concrete, form oils, surface hardeners, curing compounds, and laitance shall be removed from surfaces by abrasive blasting and chipping, and voids and cracks shall be repaired as specified in Section 09900.3.08 and as indicated by the underlayment paragraph. After blasting concrete should be detergent-washed to remove oil, grease, and other contaminants. All active hydrostatic leaks must be stopped by use of a water spot, waterproofing, or urethane grout, as recommended by the manufacturer.
Underlayment:	Holes and any other defects up to 2 inches deep shall be filled with C120 (manufactured by Environmental Coatings). If the defects are larger than 2" deep a high early cement fill shall be used. Loose or splattered underlayment shall be removed by scraping and chipping. The F120 and high early cement fill shall be applied as recommended by the manufacturer.
Application:	Field Filler shall dry a minimum of 5 hours at 70 degree F prior to application of Sewer Shield 100. Coating shall be applied as recommended by the manufacturer, provided the coating as applied complies with prevailing air pollution control regulations. Drying time between coats shall be as recommended by coating manufacturer.
System Thickness:	125 mils dry film.
Coatings:	Number of coats at manufacturer's recommended dry film thickness per coat to achieve the specified system thickness.

3.06 COATING SYSTEM SPECIFICATION SHEETS (COATSPEC – Alternative 2)

Surfaces shall be coated in accordance with the COATSPEC to the system thickness specified.

Coating System Identification:	Sauereisen SewerGard No. 210RS Plasite 5371 Tnemec Series 436
Surface:	Concrete/Masonry
Surface Preparation:	Abrasive blasting or hydroblasting
Concrete:	Except as otherwise specified, loose concrete, form oils, surface hardeners, curing compounds, laitance oils, grease, dust, chemical contaminants and any previously applied coatings shall be removed from surfaces by abrasive blasting or hydroblasting, and voids and cracks shall be repaired as specified in Section 09900.3.08 and as indicated by the underlayment paragraph. After blasting concrete should be detergent washed to remove all oil, grease and other contaminants. All active hydrostatic leaks must be stopped by use of an appropriate water stop, waterproofing, or urethane grout, as recommended by the manufacturer.
Underlayment:	Sauereisen No. F-120 Trowelable, Carbogard 510, or Tnemec Series 218 shall be used to fill holes and any other defects. Loose or splattered underlayment shall be removed by scraping and chipping. Underlayment shall be applied as recommended by the manufacturer.
Application:	Field Underlayment shall dry a minimum of 5 hours at 70 degree F prior to the application of any product. Underlayment must be cured by means of fog spray, wet burlap, or appropriate manufacturer's curing compound. Coating shall be applied as recommended by the manufacturer, provided the coating as applied complies with prevailing air pollution control regulations.

3.06 COATING SYSTEM SPECIFICATION SHEETS (COATSPEC – Alternative 2) (cont'd)

System Thickness:	125 mils dry film
Coatings:	Number of coats at manufacturer's recommended dry film thickness per coat to achieve the specified system thickness.

3.07 SPARK TEST

All coated surfaces shall be spark tested for holes. The spark tester used shall provide 12,000 to 20,000 volts (100 volts per mil of dry film thickness). If pinholes are found, the Contractor shall repair the coating as recommended by the manufacturer and retest. All testing and repair work shall be at the Contractor's expense.

3.08 DEFECT REPAIR OF CONCRETE SURFACE

A. All surface defects including tie holes, minor honeycombing or otherwise defective concrete, shall be repaired. All voids, holes, rough or irregular concrete shall be filled.

B. The Contractor shall use the repair and fill material recommended by the coating manufacturer to repair or fill all defects. Areas to be patched shall be cleaned. Minor honeycombed or otherwise defective areas shall be cut out to solid concrete to a depth of at least one inch. The edges of the cut shall be perpendicular to the surface of the concrete. Patches on exposed surfaces shall be finished to match the adjoining surfaces after they have set. Finishes shall be equal in workmanship, texture and general appearance to that of the adjacent concrete. Concrete with honeycombing which exposes the reinforcing steel or with defects, which affect the structural strength, shall be corrected.

3.09 FIVE YEAR WARRANTY

A written warranty against coating failure shall be provided for the entire coating system, including all repair material, defect fillers, primers, intermediate coats, and finish coats. The minimum duration of the warranty shall be five (5) years. The product and the installation may be covered by the manufacturer's warranty, or separate warranties may be issued by the manufacturer and the installer.

The warranty shall state that the coating will not fail for a minimum period of five (5) years. Coating failure is defined as blistering, cracking, embrittlement, or softening, or failure to adhere to the substrate. The warranty shall also apply to any repair materials, primers, or other products used in the application.

3.10 SCHEDULE OF STRUCTURES TO BE COATED

Structure	Areas to be coated	Comments
Junction Box	Entire interior surface	
Channel from Junction Box to Flume Structure	Entire interior surface	
Flume Structure	All concrete below top of walls, including filleting	Flume liner not to be coated; all exposed concrete between flume liner and structure shall be coated

Structure	Areas to be coated	Comments
Screenings Building	Channels, including overflow channel; walls from top of channel to floor, underside of top slabs, floor of overflow channel, tops and sides of overflow weirs.	If manual bar screen is installed in west channel, coat all attachment hardware at channel floor and top of channel
Influent Pump Station	Entire interior wall surface of wet well, including underside of top slab, interior portions of pump access hatch frames, surface of ogee weir, all surfaces of pump intake compartments, floor, all filleting, shelves for pump support	Coat interior surface prior to installation of pump bases
Grit Removal Tank	Interior walls, top of wall to floor, including top of equipment platform	
Channels	Interior walls, top of wall to floor, including pump discharge separation compartments; underside of top slabs	Junction structure outlet channel, influent pump station outlet channel, grit bypass channel
Splitter Structure	Interior walls, top of wall to floor (or bottom of wall), including all baffles; underside of underflow baffles, top of weir walls	
Biofilter Sump	Interior walls, top of wall to floor and floors	The COR+GARD product has only been specified for use on the Biofilter and Biofilter Sump structures provided it meets the project reference requirements in Paragraphs 1.02 D. and 1.03 B.7. of this Section.
Biofilter	Interior walls, top of wall to floor	The COR+GARD product has only been specified for use on the Biofilter and Biofilter Sump structures provided it meets the project reference requirements in Paragraphs 1.02 D. and 1.03 B.7. of this Section.
Filtrate Pump Station	Entire interior surface of wet well, including underside of top slab, interior portions of access hatch frame, filleting, and floor	Coat interior surface prior to installation of pump bases

END OF SECTION